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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,008	05/25/2005	Sreeraman Venkatasubrahmanian	USO20475	1370
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EXAMINER LE, TUNG X				
ART UNIT 2821		PAPER NUMBER		
MAIL DATE 05/21/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/537,008

**Applicant(s)**

VENKITASUBRAHMANYAN ET AL.

**Examiner**

TUNG X. LE

**Art Unit**

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on amendment submitted 02/19/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13,15-21,23 and 24 is/are rejected.
- 7) ☒ Claim(s) 3,4,14 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 02/14/2008.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This Office Action is in response to the Applicants' amendment submitted on February 14, 2008. In virtue of this amendment:

- Claims 21-24 are newly added; and
- Thus, claims 1-24 are pending in the instant application.

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-2, 5-13, 15-21, and 23-24 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

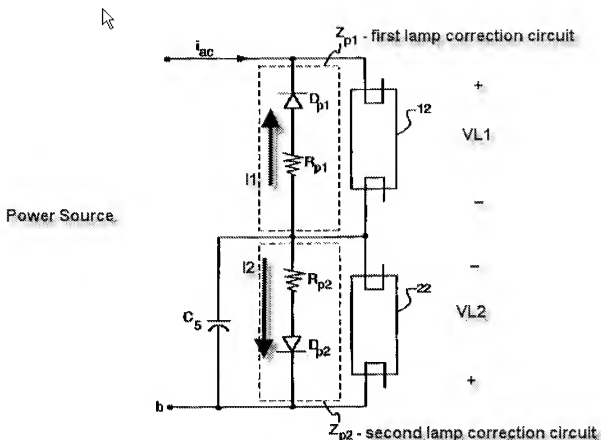
3. Claims 1-2, 5-13, 15-21, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steigerwald et al. (U.S. 5,701,059).

With respect to claim 1, Steigerwald discloses in figures 2 and 6 a fluorescent lamp circuit, comprising a power source (having a power source [10] for providing a DC power [Vdc] to the lamps) selectively arranged to deliver power to a load (having a load circuit including elements [Zp1, Zp2, and C5]); a first fluorescent lamp (12) coupled to the power source; a second fluorescent lamp (22) coupled in series to the first fluorescent lamp and coupled to the power source (figures 2 and 6); and a striation correction circuit (Zp1 and Zp2) coupled to the power source and coupled to the first

and second fluorescent lamps that is arranged to apply a first striation correction current (I1) to the first fluorescent lamp (12) and a second striation correction current (I2) to the second fluorescent lamp (22). Steigerwald does not explicitly disclose that wherein a first voltage appearing across the first fluorescent lamp resulting from the first striation correction current is *substantially similar in magnitude* and having inverted polarity with respect to a second voltage across the second fluorescent lamp resulting the second striation correction current. However, this difference is not of patentable merits since it is believed that first and second voltages across the first and second lamps can be substantially similar in magnitude if eliminating the capacitor [C5] that may not be effect or interference of the potential across the second lamp [22]. Accordingly, to select an appropriate value in the same magnitude of the voltages across the first and second lamps of Steigerwald as claimed for an effective operation would have been deemed obvious to a person skilled in the art.

With respect to claim 2, Steigerwald discloses that the fluorescent lamp circuit further comprises an end-of-life detection circuit [R3] coupled to the first and second fluorescent lamps (figure 3).

With respect to claim 5, Steigerwald discloses in figure 6 that the striation correction circuit comprises a first lamp correction circuit (Zp1) for generating the first striation correction current in the first fluorescent lamp (12) and a second lamp correction circuit (Zp2) for generating the second striation correction current in the second fluorescent lamp (22).



**FIG. 6**

With respect to claim 6, Steigerwald discloses that the first lamp correction circuit is arranged in parallel with the first lamp (figure 6) and the second lamp correction circuit is arranged in parallel with the second lamp (figure 6) and wherein the first and second lamp circuits are in series (figure 6).

With respect to claim 7, Steigerwald discloses that the first lamp correction circuit ( $Z_{p1}$ ) and the second lamp correction circuit ( $Z_{p2}$ ) each comprise a diode ( $D_{p1}$  and  $D_{p2}$ ) in series with a resistor ( $R_{p1}$  and  $R_{p2}$ ) and wherein the first and second lamp

correction circuits are arranged symmetrically with the diodes opposing one another (figure 6).

With respect to claim 8, Steigerwald discloses in figure 6 that the first lamp correction circuit and the second lamp correction circuit comprises at least one transistor (having the two diodes [Dp1 and Dp2] functioning as semiconductor transistors).

With respect to claim 9, Steigerwald discloses in figure 3 that the power source is a fluorescent lamp ballast (10) coupled to the first and second fluorescent lamps through an isolation transformer (To).

With respect to claim 10, Steigerwald discloses all of the claimed subject matter, as expressly recited in claim 1, except for an explicit teaching in that the lamp circuit further comprises at least one additional pair of fluorescent lamps and at least one additional corresponding striation correction circuit all coupled to the power source and wherein the at least one additional pair of fluorescent lamps are arranged in series with the first and second fluorescent lamps. However, this difference of having one additional pair of fluorescent lamps connected in series with the lamps is not of patentable merits since the number of lamps connected in series of the circuit can be selected at a desired number based on a particular application or environment of use. Therefore, to employ the circuit of Steigerwald at a multiple lamp connected in series to be suitable to a desired application or environment of use would have been deemed obvious to a person skilled in the art (column 1, lines 63-64).

With respect to claim 11, Steigerwald discloses in figures 2 and 6 that the first and second striation correction currents are DC signals (column 2, lines 57-62) and wherein the first striation current is opposite in sense to the second striation current (figure 6).

With respect to claim 12, Steigerwald discloses in figures 2 and 6 a method of reducing striations in a fluorescent lighting system, comprising generating a first striation connection current (I1) and a second striation correction current (I2); applying the first striation correction current to a first fluorescent lamp (12); and applying the second striation correction current to a second fluorescent lamp (22), wherein the first fluorescent lamp and the second fluorescent lamp are coupled in series (figure 6). Steigerwald does not explicitly disclose that wherein a first voltage appearing across the first fluorescent lamp resulting from the first striation correction current is *substantially similar in magnitude* and having inverted polarity with respect to a second voltage across the second fluorescent lamp resulting the second striation correction current. However, this difference is not of patentable merits since it is believed that first and second voltages across the first and second lamps can be substantially similar in magnitude if eliminating the capacitor [C5] that may not be effect or interference of the potential across the second lamp [22]. Accordingly, to select an appropriate value in the same magnitude of the voltages across the first and second lamps of Steigerwald as claimed for an effective operation would have been deemed obvious to a person skilled in the art.

With respect to claim 10, Steigerwald discloses all of the claimed subject matter, as expressly recited in claims 1 and 12, except for an explicit teaching in that the lamp circuit further comprises at least one additional pair of fluorescent lamps and at least one additional corresponding striation correction circuit all coupled to the power source and wherein the at least one additional pair of fluorescent lamps are arranged in series with the first and second fluorescent lamps. However, this difference of having one additional pair of fluorescent lamps connected in series with the lamps is not of patentable merits since the number of lamps connected in series of the circuit can be selected at a desired number based on a particular application or environment of use. Therefore, to employ the circuit of Steigerwald at a multiple lamp connected in series to be suitable to a desired application or environment of use would have been deemed obvious to a person skilled in the art (column 1, lines 63-64).

With respect to claim 13, Steigerwald discloses that the method further comprises sensing a voltage change [R3] in the fluorescent lighting circuit indicative of a fluorescent lamp end-of-life condition wherein an EOL detection circuit [R3] is coupled to the first and second fluorescent lamps (figure 3).

With respect to claim 15, Steigerwald discloses in figure 6 that a striation circuit (Zp1 and Zp2) comprises a first lamp correction circuit (Zp1) for generating the first striation correction current (I1) in the first fluorescent lamp (12) and a second lamp correction circuit (Zp2) for generating the second striation correction current (I2) in the second fluorescent lamp (22).



With respect to claim 16, Steigerwald discloses that the first lamp correction circuit is arranged in parallel with the first lamp (figure 6) and the second lamp correction circuit is arranged in parallel with the second lamp (figure 6) and wherein the first and second lamp correction circuits are in series (figure 6).

With respect to claim 17, Steigerwald discloses in figure 6 that the first lamp correction circuit and the second lamp correction circuit each comprises a diode (Dp1 and Dp2) in series with a resistor (Rp1 and Rp2) and wherein the first and second lamp correction circuits are arranged symmetrically with the diodes opposing one another (figure 6 shows the diodes [Dp1 and Dp2] opposed direction to each other).

With respect to claim 18, Steigerwald discloses in figure 6 that the first lamp correction circuit and the second lamp correction circuit are comprised of at least one component selected from the group consisting of a diode (Dp1 and Dp2).

With respect to claim 19, Steigerwald discloses all of the claimed subject matter, as expressly recited in claim 1, except for an explicit teaching in that the lamp circuit further comprises at least one additional pair of fluorescent lamps and at least one additional corresponding striation correction circuit all coupled to the power source and wherein the at least one additional pair of fluorescent lamps are arranged in series with the first and second fluorescent lamps. However, this difference of having one additional pair of fluorescent lamps connected in series with the lamps is not of patentable merits since the number of lamps connected in series of the circuit can be selected at a desired number based on a particular application or environment of use. Therefore, to employ the circuit of Steigerwald at a multiple lamp connected in series to

be suitable to a desired application or environment of use would have been deemed obvious to a person skilled in the art (column 1, lines 63-64).

With respect to claim 20, Steigerwald discloses in figures 2 and 6 a system for reducing striations (column 3, lines 1-10) in a multi-tube fluorescent lamp assembly (12, 22), comprising means for generating a first striation correction current (I1) and a second striation correction current (I2); means for applying the first striation correction current to a first fluorescent lamp (12); means for applying the second striation correction current to a second fluorescent lamp (22); and wherein the first fluorescent lamp and the second fluorescent lamp are coupled in series (figure 6). Steigerwald does not explicitly disclose that wherein a first voltage appearing across the first fluorescent lamp resulting from the first striation correction current is *substantially similar in magnitude* and having inverted polarity with respect to a second voltage across the second fluorescent lamp resulting the second striation correction current. However, this difference is not of patentable merits since it is believed that first and second voltages across the first and second lamps can be substantially similar in magnitude if eliminating the capacitor [C5] that may not be effect or interference of the potential across the second lamp [22]. Accordingly, to select an appropriate value in the same magnitude of the voltages across the first and second lamps of Steigerwald as claimed for an effective operation would have been deemed obvious to a person skilled in the art.

With respect to claims 21 and 23-24, Steigerwald discloses that the first striation correction current and the second striation correction current are substantially equivalent in magnitude (figure 6).

***Allowable Subject Matter***

4. Claims 3-4, 14, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record fails to disclose or fairly suggest:

The fluorescent lamp circuit comprising wherein the end-of-life detection circuit comprises a capacitor arranged in series with the first and second fluorescent lamps to sense voltage changes in a closed loop circuit with the power source and the first and second fluorescent lamps, in combination with the remaining claimed limitations as claimed in dependent claims 3 and 14 (claims 4 and 22 are objected since they are dependent on claim 3).

***Inquiry***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUNG X. LE whose telephone number is (571)272-6010. The examiner can normally be reached on 8:30 AM - 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thuy Vinh Tran/  
for Le, Tung X., Examiner of Art Unit 2821  
05/19/2008